

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Previously Presented) A plasma processing method for implementing a plasma process on a silicon oxide film layer formed at a workpiece placed inside a process chamber by generating plasma from a process gas containing, at least, fluorocarbon introduced into said process chamber, wherein;

oxygen is intermittently added into the process gas,

the length of time over which the oxygen is added into the process gas is less than the length of time over which the oxygen is not added into the process gas, and

the fluorocarbon is continuously introduced into the process chamber during the plasma process.

2. (Original) A plasma processing method according to claim 1, wherein;

the oxygen is cyclically added into the process gas.

3-4. (Cancelled).

5. (Previously Presented) The plasma processing method according to claim 23, wherein;

a relationship between a change occurring in the aspect ratio and a change occurring in the plasma is ascertained in advance and the oxygen added into the process gas is adjusted in conformance to the change in the plasma.

6. (Original) A plasma processing method according to claim 1, wherein;
the oxygen is added after the plasma has stabilized.

7. (Previously Presented) A plasma processing method for implementing a plasma process on a silicon oxide film layer formed at a workpiece placed inside a process chamber by generating plasma from a process gas containing, at least, fluorocarbon introduced into said process chamber, wherein;

oxygen is added into the process gas and the oxygen added into the process gas is increased and decreased in relative measure,

the length of time over which the oxygen added into the process gas is increased is less than the length of time over which the oxygen added is decreased, and

the fluorocarbon is continuously introduced into the process chamber during the plasma process.

8. (Original) A plasma processing method according to claim 7, wherein;
the oxygen added into the process gas is increased and decreased cyclicly.

9-11. (Cancelled).

12. (Previously Presented) A plasma processing method according to claim 13, wherein;

the oxygen added into the process gas is increased and decreased after the plasma has stabilized.

13. (Previously Presented) A plasma processing method for implementing a plasma process on a silicon oxide film layer formed at a workpiece placed inside a process chamber by generating plasma from a process gas containing, at least, fluorocarbon introduced into said process chamber, wherein;

oxygen is added into the process gas and the oxygen added into the process gas is increased in proportion to an increase in an aspect ratio of a contact hole formed at said silicon oxide film layer, and

the fluorocarbon is continuously introduced into the process chamber during the plasma process.

14. (Previously Presented) A plasma processing method according to claim 13, wherein;

the relationship between a change occurring in the aspect ratio and a change occurring in the plasma composition is ascertained in advance and the oxygen added into the process gas is adjusted in proportion to the change in the plasma composition.

15. (Previously Presented) A plasma processing method according to claim 13, wherein;

the oxygen added into the process gas is continuously increased.

16. (Previously Presented) A plasma processing method according to claim 13, wherein;

the oxygen added into the process gas is increased in stages.

17. (Previously Presented) A plasma processing method for implementing a plasma process on a silicon oxide film layer formed at a workpiece placed on a second electrode by introducing a process gas containing, at least, fluorocarbon into a process chamber, applying high-frequency power to a first electrode and said second electrode facing opposite each other inside said process chamber and thus raising the process gas to plasma, wherein;

the frequency of the high-frequency power applied to said second electrode is lower than the frequency of the high-frequency power applied to said first electrode;

the high-frequency power is intermittently applied to said first electrode;

oxygen is intermittently added into the process gas;

a contact hole is formed at said silicon oxide film layer; the quantity of oxygen added into the process gas is increased in proportion to an increase in the aspect ratio of said contact hole, and

the fluorocarbon is continuously introduced into the process chamber during the plasma process.

18. (Original) A plasma processing method according to claim 17, wherein;

the oxygen is cyclically added into the process gas.

19. (Cancelled).

20. (Currently Amended) A plasma processing method for implementing a plasma process on a silicon oxide film layer formed at a workpiece placed on a second electrode by introducing a process gas containing, at least, fluorocarbon and oxygen into a process chamber, applying high-frequency power to a first electrode and said second electrode facing opposite each other inside said process chamber and thus raising the process gas to plasma, wherein;

the frequency of the high-frequency power applied to said second electrode is lower than the frequency of the high-frequency power applied to said first electrode;

the high-frequency power is intermittently applied to said first electrode;

said plasma process is implemented while increasing ~~and decreasing~~ the oxygen added into the process gas and while decreasing the oxygen added into the process gas, and

the fluorocarbon is continuously introduced into the process chamber during the plasma process.

21. (Previously Presented) A plasma processing method for implementing a plasma process on a silicon oxide film layer formed at a workpiece placed on a second electrode by introducing a process gas containing, at least, fluorocarbon and oxygen into a process chamber, applying high-frequency power to a first electrode and said

second electrode facing opposite each other inside said process chamber and thus raising the process gas to plasma, wherein;

the frequency of the high-frequency power applied to said second electrode is lower than the frequency of the high-frequency power applied to said first electrode;

the high-frequency power is intermittently applied to said first electrode;

said plasma process is implemented while increasing the oxygen added into the process gas, and

the fluorocarbon is continuously introduced into the process chamber during the plasma process.

22. (Previously Presented) A plasma processing method according to claim 21, wherein;

a contact hole is formed at said silicon oxide film layer; and

the oxygen added into the process gas is increased in proportion to an increase in an aspect ratio of said contact hole.

23. (Previously Presented) A plasma processing method for implementing a plasma process on a silicon oxide film layer formed at a workpiece placed inside a process chamber by generating plasma from a process gas containing, at least, fluorocarbon introduced into said process chamber,

wherein oxygen is intermittently added into the process gas,

wherein a contact hole is formed at said silicon oxide film layer,

wherein the oxygen added into the process gas is increased in proportion to an increase in an aspect ratio of said contact hole, and

the fluorocarbon is continuously introduced into the process chamber during the plasma process.

24. (Previously Presented) The plasma processing method according to claim 23, wherein the oxygen is cyclically added into the process gas.

25. (Previously Presented) The plasma processing method according to claim 23, wherein the oxygen is added after the plasma has stabilized.